

**REMARKS**

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1 and 3-9 will be pending. By this amendment, claim 2 has been canceled; claims 1 and 3-9 have been amended. No new matter has been added.

**§112 Rejection of Claims 3 and 7**

In Section 3 of the Office Action, claims 3 and 7 stand objected to under 35 U.S.C. §112, second paragraph as being indefinite. Claims 3 and 7 have been amended to address the rejection.

The amended term “adaptation zones” is described on page 21, lines 14-25 and on page 23, lines 1-10.

**§102 Rejection of Claims 1, 8, and 9**

In Section 5 of the Office Action, claims 1, 8, and 9 stand rejected under 35 U.S.C. §102(b) as being anticipated by Fu Qiuliang *et al.* (Paper entitled Chinese Word Recognition and Understanding with Information Feedback; presented at 3rd International Conference on Signal Processing, 1996; hereinafter referred to as “Fu”). Claims 1, 8, and 9 have been amended to address the rejection.

In the Background section of the Specification, it was disclosed that “[a]nother method for adapting models ... in which language models or data for creating language models are prepared according to tasks, such as according to specific fields or topics, and different tasks of

language models are combined [off-line] to create a high-precision language model .... In order to perform on-line adaptation by employing this method, however, it is necessary to infer the type of task of the speech, which makes it difficult to perform adaptation by the single use of a speech recognition apparatus.” *Background of the Specification, page 3, line 19 to page 2, line 4.*

To address the above-described shortcomings of adaptation models used in conventional speech processing, embodiments of the present invention provide feedback information to adapt the acoustic models in the speech recognition. For example, the structure of speech processing apparatus claim 1, as presented herein, includes:

“*speech recognition means* for performing speech recognition on input speech to produce a speech recognition result using acoustic models; and

*natural-language processing means* for performing natural language processing on said speech recognition result, said natural-language processing means including

*feedback means* for feeding back information obtained as a result of the natural language processing performed on the speech recognition result to said speech recognition means, said feedback information including adaptation zones,

wherein said speech recognition means comprises

adaptation process means for processing the information fed back from said feedback means to adapt the acoustic models so that said speech recognition means produces the speech recognition result with higher precision than when said adaptation process means is not used.”

(emphasis added)

Therefore, in summary, the speech processing apparatus includes feedback means to feed back information including adaptation zones and an adaptation means to process the feedback information to adapt the acoustic models so that the speech recognition means produces the speech recognition result with higher precision than when the adaptation process means is not

used in the speech recognition means. See description of the adaptation processor 19 on page 16, line 18 to page 17, line 6 of the Specification.

However, Fu discloses that “the system compares the creative language with the understanding language, corrects the mistake by itself [on] the basis of linguistic rule set, and [extracts] the final result.” *Fu, page 738, column 1, line 44 to column 2, line 2.* Thus, it seems that Fu uses the feedback to correct the speech itself rather than processing the feedback information to adapt the acoustic models so that the speech recognition means produces the speech recognition result with higher precision than when the adaptation process means is not used in the speech recognition means. Therefore, it is maintained that Fu does not anticipate claim 1.

Based on the foregoing discussion, claim 1, as presented herein, should be allowable over Fu. Furthermore, since independent claims 8 and 9 closely parallel, and include substantially similar limitations as, independent claim 1, claims 8 and 9 should also be allowable over Fu.

Accordingly, it is submitted that the Examiner’s rejection of claims 1, 8, and 9 based upon 35 U.S.C. §102(b) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### §103 Rejection of Claims 2, 4, 5, and 7

In Section 7 of the Office Action, claims 2, 4, 5, and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fu in view of Nguyen *et al.* (U.S. Patent No. 6,272,462; hereinafter referred to as “Nguyen”).

Based on the foregoing discussion regarding claim 1, and since claims 2, 4, 5, and 7 depend from claim 1, claims 2, 4, 5, and 7 should be allowable over Fu.

It is indicated that Nguyen uses adaptation of speech models based on supervised adaptation data. *Nguyen, column 2, lines 47-51.* However, this is one of the shortcomings of the conventional speech processing as described in the Background. *Background of the Specification, page 1, line 18 to page 2, line 8.* Embodiments of the present invention are configured to overcome these shortcomings.

Therefore, Fu and Nguyen, in combination or individually, fail to teach or suggest a speech processing apparatus, which includes feedback means to feed back information including adaptation zones and an adaptation means to process the feedback information to adapt the acoustic models so that the speech recognition means produces the speech recognition result with higher precision than when the adaptation process means is not used in the speech recognition means.

Accordingly, it is submitted that the Examiner's rejection of claims 2, 4, 5, and 7 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### §103 Rejection of Claims 2 and 3

In Section 8 of the Office Action, claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fu in view of Bub (*Task Adaptation for Dialogues via telephone lines*).

Based on the foregoing discussion regarding claim 1, and since claims 2 and 3 depend from claim 1, claims 2 and 3 should be allowable over Fu.

It is indicated that Bub teaches task adaptation of models for dialogues. Therefore, Fu and Bub, in combination or individually, fail to teach or suggest a speech processing apparatus,

which includes *feedback means to feed back information including adaptation zones* and *an adaptation means to process the feedback information to adapt the acoustic models so that the speech recognition means produces the speech recognition result with higher precision than when the adaptation process means is not used in the speech recognition means.*

Accordingly, it is submitted that the Examiner's rejection of claims 2 and 3 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### §103 Rejection of Claims 2 and 6

In Section 9 of the Office Action, claims 2 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fu in view of Matsunaga *et al. (Task Adaptation Stochastic Language Models for Continuous Speech Recognition;* hereinafter referred to as "Matsunaga").

Based on the foregoing discussion regarding claim 1, and since claims 2 and 6 depend from claim 1, claims 2 and 6 should be allowable over Fu.

It is indicated that Matsunaga teaches adaptation of speech recognition models based upon a target task. Therefore, Fu and Matsunaga, in combination or individually, fail to teach or suggest a speech processing apparatus, which includes *feedback means to feed back information including adaptation zones* and *an adaptation means to process the feedback information to adapt the acoustic models so that the speech recognition means produces the speech recognition result with higher precision than when the adaptation process means is not used in the speech recognition means.*

Accordingly, it is submitted that the Examiner's rejection of claims 2 and 6 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is

respectfully requested.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1 and 3-9 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as Originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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